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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,916	07/31/2002	Marc Long	S0441/270427	2386

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CHIEF PATENT COUNSEL  
SMITH & NEPHEW, INC.  
1450 BROOKS ROAD  
MEMPHIS, TN 38116

EXAMINER
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OMGBA, ESSAMA

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/049,916	<b>Applicant(s)</b> LONG ET AL.	
	<b>Examiner</b> Essama Omgba	<b>Art Unit</b> 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 70-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 70-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 11, 13 and 70-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keisling (WO 98/424460) in view of Titanium' 95: Science and Technology (Titanium' 95).

With regards to claims 1, 2, 11 and 13, Keisling discloses a process for producing an orthopedic component (see abstract), the process comprising casting a blank from a cobalt chrome alloy in a mold providing sufficient conductive heat transfer from the blank to rapidly cool the blank and produce a refined grain structure therein (page 4, lines 16-17 and page 7, lines 9-13 and the tables on pages 11 and 13), and subsequently forging the blank to produce the component (page 4, lines 16-17). Keisling does not disclose using a metal mold for the casting. However Titanium '95 teaches such a metal mold, see pages 692-695. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used a metal mold in the process of Keisling, in light of the teachings of Titanium '95, in order to produce the articles more economically. Applicant should note that it is inherent that the microstructure of the product will be further refined as a result of the forging step.

For claim 3, see page 7, lines 20-22 and page 10, lines 4-6 of Keisling.

Art Unit: 3726

For claims 70-73, Applicant should note that the process of Keisling/Titanium '95 is capable of producing such grain size reduction.

3. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keisling/Titanium' 95 as applied to claim 1 above, and further in view of Davidson (US Patent 5,498,302).

Keisling /Titanium' 95 disclose a process for producing an orthopedic component as shown above. Although Keisling /Titanium '95 does not disclose using titanium or zirconium alloys or stainless steel for the cast blanks, however it is known to use titanium and zirconium alloys or stainless steel to cast medical implants as attested by Davidson, see column 1, lines 26-29, column 4, lines 64-67 and column 5, lines 1-5. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have used titanium or zirconium alloys or stainless steel in casting the components of Keisling/Titanium '95, in light of the teachings of Davidson, as is known in the art.

4. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keisling/Titanium' 95 as applied to claim 1 above, and further in view of High Temperature Metal Mold Casting (HTMMC).

Keisling/Titanium '95 discloses a process for producing a component as shown above except for using a gravity metal mold. However HTMMC teaches using a gravity metal mold in casting components, see whole document. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have

Art Unit: 3726

cast the component of Keisling/Titanium '95 using a gravity metal mold, in light of the teachings of HTMMC, in order to simplify the manufacturing process.

5. Claims 8-10, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keisling/Titanium' 95 as applied to claim 1 above, and further in view of Vacuum Diecasting (VC).

Keisling/Titanium '95 discloses a process for producing a component as shown above except for using a gravity metal mold. However VC teaches using a vacuum metal mold in casting components, see whole document. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have cast the component of Keisling/Titanium '95 using a vacuum metal mold, in light of the teachings of VC, in order to achieve a fast, simple manufacturing process. Applicant should note that VC process produces grain size in the 100  $\mu$ m range. And that the ultimate tensile strength of components produced using vacuum diecasting is 10-12 percent higher than investment casting.

### ***Response to Arguments***

6. Applicant's arguments filed October 26, 2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that the examiner has not explained why one of ordinary skill in the art would have been motivated to combine the teachings of Titanium' 95 with those of Keisling, the examiner respectfully disagrees. As outlined in the above rejection, using a permanent metal mold, which are known to provide

Art Unit: 3726

sufficient conductive heat transfer to rapidly cool a blank, would be more economical than using the mold disclosed by Keisling. At the time of Applicant's invention both types of mold were known and the examiner maintains that it is within the general knowledge of one of ordinary skill in the art to choose the more economical mold. It is known to cast blanks in metal molds and it is also known to forge blanks cast in metal molds. The broadly recited steps of casting in a metal mold and forging a cast blank are well known in the art.

7. In response to Applicant's argument based upon the age of the references, contentions that the reference patents were known are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

In response to Applicant's argument that Titanium' 95 contemplates casting into basically final form, the examiner would like to point out that Titanium' 95 is used to show that permanent metal molds are known and as discussed above it is known to use permanent molds to cast articles and it is known to forged cast articles. Numerous prior arts made of record in the instant application support this point, see for example US Patent 4,129,680 to Vines or US Patent 5,363,900 to Betz. The use of cobalt/chromium alloys in casting dental appliances has long been known. Also the refined grain structure is a direct result of using a permanent mold with sufficient conductive heat transfer to rapidly cool the blank and it is also known that forging produce a refinement of the grain structure of the forged component.

In view of the above remarks, the examiner maintains that a *prima facie* case of obviousness has been established in the instant application.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Essama Omgba whose telephone number is (571) 272-4532. The examiner can normally be reached on M-F 9-6:30, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3726

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Essama Omgba  
Primary Examiner  
Art Unit 3726

eo  
March 19, 2006